

Claims

SK 917

~~1. Harvesting equipment (1) for harvesting corn or other such stalked~~
plants, the harvesting equipment comprising at least one circulating endless conveyor (10; 1) for gathered plants, which has at the end a delivery area (14) for delivering the harvested plants to an inlet opening of a further processing apparatus, especially a chopper, the endless conveyor comprising conveyor links (25; 26) articulated to one another and at least one lower cutting plane (A) comprising outwardly pointing cutting means and at least one holding plane (B; C) above it comprising outwardly pointing holding means for holding the cut stalks, wherein a front side (77; 78) of the endless conveyor (10; 11) facing the cutting and holding means is made to be substantially closed.

2. The harvesting equipment of claim 1, wherein the endless conveyor (10; 11) has a lower cutting plane (A) and above it two holding planes (B; C) provided with means for holding the stalks.

3. The harvesting equipment of one of the claims 1 or 2, wherein the holding means (53; 54) of the upper holding plane (C) are offset against the line of travel (F) from the holding means (51; 52) of the lower holding plane (B) in the area of the working strand of the endless conveyor (10; 11).

4. The harvesting equipment of one of the claims 1 to 3, wherein the conveyor links (25; 26) of the endless conveyor (10; 11) are made each in one piece or from parts permanently joined to one another.

5. The harvesting equipment of one of the claims 1 to 4, wherein, to form the closed front face of each particular conveyor link (25; 26), a first deflecting shield (41) forming a component of the conveyor link (25; 26) is provided between the

cutting plane (A) and the first holding plane (B) and a second deflecting shield (47) is provided between the first (B) and the second (C) holding plane.

6. The harvesting equipment of claim 5, wherein the deflection shields (41; 47) extend between joint axes (60; 61) of the particular conveyor links.

7. The harvesting equipment of one of the claims 5 or 6, wherein the deflection shields (41; 47) have a bulging shape and the deflection shields (41; 47) of adjacent conveyor links (25; 26) form in the delivery area (14), in which a turnabout of the endless conveyor (10; 11) takes place, a substantially continuous, kink-free curved path.

8. The harvesting equipment of one of the claims 1 to 7, wherein the endless conveyor (10; 11) is held in a frame, a cutting knife (34) being associated with the frame and the endless conveyor (10; 11) being movable relative thereto.

9. The harvesting equipment of claim 8, wherein the endless conveyor (10; 11) has in its cutting plane (A) a lower driver (32; 33), which cooperates with the knife (34) as a counter-knife.

10. The harvesting equipment of one of the claims 1 to 9, wherein, with the closed front surface of the endless conveyor (10; 11), there is associated at least one stripper (42; 48), with respect to which the endless conveyor is relatively movable.

11. The harvesting equipment of claim 10, wherein the stripper or strippers (42; 48) are disposed in the delivery area (14) of the endless conveyor (10; 11).

12. The harvesting equipment of one of the claims 10 or 11, wherein the stripper or strippers (42; 48) are configured as substantially rigid bodies standing on

edge, which are disposed in each case between two cutting and/or holding plates (A; B; C) of the endless conveyor.

13. The harvesting equipment of one of the claims 10 to 12, wherein the stripper or strippers (42; 48) sweep substantially completely the distance between a cutting plane (A) and a holding plane (B) and/or between two holding planes (B; C).

14. The harvesting equipment of one of the claims 10 to 13, wherein the stripper (42; 48) is held in the area of the delivery (14) and extends forward with its free end substantially in the line of travel and reaches into the curved turnaround area of the endless conveyor (10; 11).

15. The harvesting equipment of claim 14, wherein strippers (42; 48) are disposed on both sides of an inlet opening to a further processing apparatus and form lateral guiding surfaces for the plants.

16. The harvesting equipment of one of the claims 10 to 15, wherein the strippers (42; 48) are combined in one component for two superimposed deflection shields (41; 47).

17. The harvesting equipment of one of the claims 10 to 16, wherein the strippers (42; 48) consist of spring steel.

18. The harvesting equipment of one of the claims 10 to 17, wherein the strippers are yieldingly supported by spring mounting.

19. The harvesting equipment of one of the claims 1 to 18, wherein a first holding plane (B) of the endless conveyor is formed by the fact that each conveyor link (10; 11) has in the holding plane (B) at least one driver (51; 52), which is part of a

flat body (45) lying in the conveying and guiding plane, the flat body (45) having at least one projection forming the driver (51; 52), which projects outwardly across the direction of rotation (U1; U2) of the endless conveyor (10; 11).

20. The harvesting equipment of one of the claims 1 to 19, wherein a second holding plane (C) of the endless conveyor (10; 11) is formed by the fact that each conveyor link (25; 26) has in the holding plane (C) at least one driver (53; 54) which is part of a flat body (46) lying in the conveying and guiding plane, the flat body (46) having at least one projection forming the driver, which projects outward across the direction of rotation (U1; U2) of the endless conveyor (10; 11).

21. The harvesting equipment of one of the claims 19 or 20, wherein a flat body (45; 46) has two forwardly extending projections (51, 52; 53, 54).

22. The harvesting equipment of claim 21, wherein approximately equal intervals are formed between the projections (51, 52; 53, 54) of each flat body (45; 46) and the projections (52, 51; 54, 53) of an adjacent flat body (45; 46) lying in the same plane (B; C).

23. The harvesting equipment of one of the claims 19 to 22, wherein the flat bodies (45; 46) of the holding planes (B; C) have each two projections (51, 52) and (53, 54).

24. The harvesting equipment of one of the claims 19 to 23, wherein the projections (51; 52) of at least one holding plane (45) are configured as flat bodies extended in a parallelogram-like manner.

25. The harvesting equipment of one of the claims 19 to 24, wherein projections (53; 54) expand counter to the line of travel (F) and thus the distance (55)

between the projections (53; 54) decreases in the area of the working strand (18) counter to the line of travel (F).

26. The harvesting equipment of one of the claims 19 to 25, wherein, in a lower holding plane (B), substantially parallelogram-shaped projections (51; 52) are formed and, in an upper holding plane (C), triangular projections (53; 54) of the flat bodies (45; 46) are formed and, on the one hand, the cut stalks (3) can be held in the acute angle (W) between the parallelogram-shaped projection (51; 52) and the front edge (45a) of the flat body (45) and, on the other, in the angle between the triangular projection (53; 54) and the front edge (46a) of the flat body (46) of the upper holding plane (C).

27. The harvesting equipment of claim 26, wherein the space (55) for the cut stalks (3), which is formed by the projections (51, 52; 53, 54) of the said holding planes (B; C) acting as holding parts, narrows counter to the travel direction (F).

28. The harvesting equipment of one of the claims 19 to 27, wherein the front edge (45a, 46a) of the flat bodies (45; 46) is of substantially arcuate shape between the projections (51, 52; 53, 54).

29. The harvesting equipment of one of the claims 19 to 28, wherein the flat bodies (45, 46) have at one end, parallel to the direction of rotation (U1; U2), a substantially arcuate broadening (64; 65) and, at the other end, a complementary recess (68; 69), flat bodies (45; 46) of adjacent conveyor links (25; 26) engaging one another with slight clearance in the assembled state.

30. The harvesting equipment of one of the preceding claims, wherein a flat body (44) bearing the driver (31) configured as counter-knife has, parallel to the direction of rotation (U1; U2), an arcuate segment (66; 67) at one end and, at the other

end, a complementary recess (70), and adjacent flat bodies (44) mate with one another with slight free play.

31. The harvesting equipment of one of the preceding claims, wherein the curvature of the deflection shields (41; 47) as well as the curvature of the leading edge (44a; 45a; 46a) of the flat body (44; 45; 46) is configured arcuately (64).

32. The harvesting equipment of claim 28, wherein the radius of curvature is substantially the same as the radius of an idle sprocket or drive sprocket disposed near the delivery area (14) of the endless conveyor (10; 11) at the processing apparatus.

33. The harvesting equipment of one of the claims 1 to 30, wherein each conveyor link (25; 26) of the endless conveyor (10; 11) can be composed of two sections (37; 38) and locked.

34. The harvesting equipment of one of the claims 1 to 33, wherein adjacent conveyor links (25; 26) have a swiveling connection (73).

35. The harvesting equipment of claim 34, wherein the swiveling connection (73) between adjacent conveyor links (25; 26) can be produced by a pin (49) associated with the upper section (38) and a bearing (43) to receive the pin in the lower section (37) of an adjacent conveyor link (25; 26).

36. The harvesting equipment of claim 35, wherein sealed rolling bearings or grooved ball bearings are provided as bearings (72) for the swiveling connections (73).

37. The harvesting equipment of one of the claims 1 to 36, wherein the arcuate segments (64; 66; 67) of the flat bodies (44; 45; 46) form a covering of the bearings (72).

38. The harvesting equipment of one of the claims 33 to 37, wherein the sections (37; 38) of a conveyor link (25, 26) are bolted together.

39. The harvesting equipment of one of the claims 33 to 38, wherein the upper section (38) comprises the flat bodies (45; 46) with the projections (51; 52; 53; 54) forming the holding planes and with the deflection shield (47) between them.

40. The harvesting equipment of one of the claims 33 to 39, wherein the lower section (37) comprises the counter-knives (31), configured as drivers, and an additional deflection shield (41).

41. The harvesting equipment of one of the claims 1 to 40, wherein the endless conveyor (10; 11) has projections on the conveyor links (25; 26) for engaging a drive.

42. The harvesting equipment of claim 41, wherein the projections are formed by the sleeve bodies (43) forming the bearing.

43. The harvesting equipment of claim 42, wherein, to drive the endless conveyor (10; 11), at least two sprockets lying opposite one another are provided, which engage the projections (43) and produce the rotation of the conveyor links (25; 26).

44. The harvesting equipment of claim 43, wherein a driving wheel of the endless conveyor is associated with the delivery area (14) and a turning around of the

endless conveyor (10; 11) takes place in the area of delivery (14) to the further processing apparatus.

45. The harvesting equipment of one of the claims 1 to 44, wherein, in the area of the drive sprocket of the endless conveyor (10; 11), additional conveyors rotating about the axis of rotation (12.1; 13.1) can be mounted.

46. The harvesting equipment of one of the claims 1 to 45, wherein the conveyor links (25; 26) of the endless conveyor (10; 11) are guided in their movement between the driving and idle sprockets.

47. The harvesting equipment of one of the claims 1 to 46, wherein the conveyor links (25; 26) are provided on their backs with an engaging means (29, 129) aligned parallel to the direction of rotation (U1; U2) and into a corresponding recess (30; 130) of a guiding strip (28; 128).

48. The harvesting equipment of claim 47, wherein the engaging means (129) is formed by an upturned projection, which has a sliding or rolling bearing to guide it in the recess (130).

49. The harvesting equipment of one of the claims 1 to 48, wherein two endless conveyors (10; 11) pointing laterally outward and lying essentially next to one another in operation, are provided.

50. The harvesting equipment of one of the claims 1 to 49, wherein leaf and plant lifters (15) are assigned to each frame that bears the endless conveyor and this lifter comprises in each case a pyramid-shaped parting point (16).

51. The harvesting equipment of claim 50, wherein, with each parting point (16), a guiding hook (17) is associated, which comprises an arm pointing substantially in the conveying direction (U1; U2).

52. The harvesting equipment of claim 51, wherein the arm extends up to the next leaf and plant lifter (15).

53. The harvesting equipment of one of the claims 51 or 52, wherein the guiding hook (17) is resiliently mounted.

54. The harvesting equipment of claim 53, wherein the spring force of the guiding arm (17) is put under tension against the line of travel (F) so as to form a channel between the guiding arm (17) and the working strand (18) of the endless conveyor (10; 11) to carry the stalked plants (3) counter to the line of travel (F).

55. The harvesting equipment of one of the claims 1 to 54, wherein movable cutting knives (112; 113), separate from the endless conveyors, are disposed underneath the endless conveyor.

56. The harvesting equipment of claim 55, wherein the movable cutting knives (112; 113) are configured as revolving disks and are disposed in a plane situated directly under the plane of movement of the endless conveyor and parallel to its path of movement.

57. The harvesting equipment of claim 56, wherein the endless conveyors sweep with their working strand over a transport area running transversely across the line of travel (F) and the revolving knives (112; 113) are arranged side by side and staggered underneath this transport area.

58. The harvesting equipment of one of the claims 55 to 57, wherein the conveyor links have in a lower plane cutting means cooperating with the revolving knives (112; 113).

59. The harvesting equipment of one of the claims 55 to 57, wherein the revolving knives (112; 113) freely sever the stalks (3)

60. The harvesting equipment of one of the claims 55 to 59, wherein the revolving knives (112; 113) are fixedly journaled with respect to the frame (110; 111) holding the endless conveyors (10; 11).

61. The harvesting equipment of claim 60, wherein the revolving knives (112; 113) run in two planes and overlap one another.

62. The harvesting equipment of one of the claims 1 to 61, wherein in the area of transfer (14) there is provided a fixed counter-knife (132), under which the driver (31) of cutting plane (A) closely passes and over which an additional driver (131) situated above and parallel to the driver (31) closely passes.

63. The harvesting equipment of claim 61, wherein the upper driver (131) is affixed to the conveyor links (25; 26) of the conveyors (10, 11) by means of projections (133) fastened on the back and reaching through the deflection shield (41).